REMARKS

I. Status of the Application:

5   A petition and fee for a three-month extension of time in which to respond has been filed herewith.

Claims 1 - 48 are pending in the above-identified application.

In the March 22, 2006, Office Action (hereafter the "Office Action") claims 1-10, 19, 20, 27 - 35, and 39 - 48 were rejected under 35 U.S.C. §102 (b) as being

10   anticipated by Winegarden et al. U.S. Patent No. 6,467,009 (hereinafter referred to as "Winegarden") (Office Action, points 1 – 19). Claims 11-13, 14-18, 21-26, 36-38 were rejected under 35 U.S.C. §103(a) as being unpatentable over Winegarden (Office Action, points 20 – 30). Winegarden was the only reference cited by the Patent Office in the rejection of these claims; there was no secondary reference cited.

15   The Patent Office has tacitly admitted that Winegarden does not disclose or suggest every limitation recited in claims 11-13, 14-16, 21-26, 36-38 (*e.g.*, Office Action, points 22, 24), and merely assumes without factual or legal support that any limitation in claims 11-13, 14-16, 21-26, 36-38 that was *not* shown by Winegarden, would have been obvious to one of ordinary skill in the art. In other instances, claimed

20   limitations were expressly ignored, contrary to Federal Circuit precedent which holds that the claim language "adapted to" does recite affirmative claim limitations. The Patent Office presented no reference in support of the rejection of these claims. In other words, the Patent Office's rejection of these claims was, by definition, conclusory.

II. Summary of the Claim Amendments:

25   Of the 48 pending claims, claims 1, 14, 19, 27, 33, 41 and 42 are independent.

Claims 1 - 13 are allowable over the prior art cited by the Examiner, without amendment, for reasons set forth below. Upon entry of this amendment, the remaining claims 14 - 48 are also allowable over the prior art cited by the Examiner.

30   Independent claim 14 has been amended to clarify the claimed subject matter. Paraphrased, claim 14 has been amended to recite that first, second and third

14

adaptive computing engines are coupled to each other in a ring topology bus and that packets are passed around the three adaptive computing engines via the ring topology bus. The third limitation of claim 14 has also been amended to clarify a potential ambiguity. That limitation has been amended to recite that the kernel node is adapted for

5   determining whether a packet is -- addressed -- to a computational node instead of being *intended* for a node

Dependent claim 16 has been amended to recite in that the ring is a ring topology bus. Dependent claim 17 has been amended to recite that the ring topology bus may have -- more than two -- adaptive computing engines rather than the ambiguous

10   "three or four" adaptive computing engines. Dependent claim 18 has been amended to change its dependency from claim 14 to claim 16 because the D-type flip-flops recited in claim 18, are first recited in claim 16 and not in claim 14.

Paraphrased, independent claim 19 has been amended in the preamble to recite that the adaptive computing engines have an input port and an output port. The

15   preamble has also been amended to recite that the adaptive computing engines are coupled to each other through a ring topology bus. The first word of each limitation has been amended to change the uppercase letter in each first word to lowercase. The transfer of information from a D-type flip-flop has been clarified to recite that such information is transferred from the output port of one adaptive computing engine to the

20   input port of an adjacent computing engine via the ring topology bus. In the last limitation of claim 19 the, the word "window" has been replaced by --time period -- to obviate a potential ambiguity under 35 USC §112.

Dependent claims 20, 21, 22, 23, and 24, which depend from claim 19, have been amended to change the "ring" limitation to --ring topology bus-- thereby

25   conforming their claim terms to the terms used in independent claim 19.

Paraphrased, independent claim 27 has been amended to recite that the adaptive computing engines are coupled to each other by a ring topology bus and that this bus extends between two devices that are adjacent to each other in the ring topology.

Paraphrased, independent claim 33 has been amended to clarify that he

30   processing node has a *corresponding* core processor. The claim has also been amended

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in the last limitation to recite that the computational elements are coupled together in a ring topology bus.

Paraphrased, independent claim 41 has been amended to recite a plurality of computational elements that are coupled to each other to a ring topology bus. Each of

5   the computational elements in the ring is adapted to perform a selected function.

Independent claim 42 is directed to a single adaptive computing engine. This claim has been amended to recite that the adaptive computing engine ("ACE") has ports that enable the ACE to be coupled into a ring-topology network.

III. The Rejections under 35 U.S.C. §102(a) Should be Withdrawn:

10   Regarding the claims, in the Office Action, the Patent Office asserted that Winegarden discloses all of the limitations of claims 1-10, 19, 20, 27 - 35, and 39 – 48, including in particular, a first semiconductor device having a plurality of computation nodes; a second semiconductor device having a microprocessor-based node adapted function as a system controller and a plurality of computational nodes.

15   The applicant acknowledges that Winegarden does in fact disclose first and second semiconductor devices and that one of the semiconductor devices is a microprocessor that serves as a system controller. The Office Action is incorrect, however, in contending that Winegarden shows the semiconductor devices interconnected to each other over a "ring topology bus" that is recited in each of the

20   independent claims. More specifically, not only does Winegarden not disclose a ring topology bus, but also Winegarden expressly *teaches away* from the use of a ring topology bus by its use of a master-slave arrangement.

The Office Action cited Figures 10 and 40 of Winegarden, and the text in column 6, line 45 helps 37 line 45, as ostensibly teaching the ring topology bus recited in

25   claims 1-10, 19, 20, 27 - 35, and 39 – 48. No prior art cited by the Patent Office supports the rejection under §102.

A "ring network" or a "ring topology" bus is a bus architecture well known to those of ordinary skill in the art as a connection of devices or nodes in a closed loop or ring. Messages in a ring network or ring topology bus are carried around the ring

30   from node to node, in one direction. When one node receives a message, it examines the destination address in the message. If the destination address of a message is the same as

16

the node, the node accepts the message, otherwise, it regenerates a signal and/or the message and passes the message along to the next node in the ring. (*See, e.g.*, The Microsoft Desktop Computer Encyclopedia, copyright 1999 by The Microsoft Corp.)

5   Under well-established Federal Circuit case law, the Patent Office must construe the pending claims in light of the specification. The meaning or construction of the "ring topology bus" that is used in the claims, is provided by the applicant in at least paragraphs [106] – [109]. By those paragraphs, the meaning of "ring topology bus" is clear and unambiguous. The meaning ascribed to a "ring topology" network in the specification also conforms to the definition of a "ring network" or "ring topology" that

10   has been published by The Microsoft Corporation.

         Referring now to the specification, in paragraphs [109] – [114] describe the operation of two or more adaptive computing engine devices that are depicted in Figures 8A and 8B. Paragraph [109] states that each ACE device includes a device number or device ID. In the embodiment described in the applicant's specification, a

15   device ID of zero identifies a master or control ACE device that includes a k-node. The specification states in paragraph [010] that "if the device ID field of the packet... matches the ID for that device, then the packet is routed to the node destination within the device. If the device ID field does not match the device ID for that same device, the message is routed to an output port for delivery to the specified device.

20   In paragraph [114], the specification states that the when a node with an adaptive computing engine device sends out a packet, it contains a two-device ID field and a-node ID field. If the device ID field does not match the ACE, that ACE routes the packet to the output port for delivery to the next ACE in the ring. Thus, the applicant's specification makes clear the meaning of the "ring topology" bus that is recited in each of

25   the claims and it is by that meaning that the claims must be construed in light of the prior art.

         Referring now to the Office Action and to the Winegarden reference, Winegarden does not show a ring topology. While Winegarden's Figures 10 and 40 and the Winegarden text in column 36, line 45 through column 37 line 45 were cited as

30   ostensibly supporting a ring topology, a careful reading of the Winegarden text and a

17

careful inspection of the figures of Winegarden clearly show that it does <u>not</u> teach or show a "ring topology".

More specifically, in columns 36 and 37, Winegarden describes a multi-CPSU system with respect to FIGS. 10 and 40, however, neither FIG. 10 nor FIG. 40

5   show a ring topology bus. FIG. 40 shows two slave devices connected in parallel to the master chip 4010. There is absolutely no connection between the slave devices 4020. Without any connection between the two slave devices 4020 of Winegarden, it would be impossible for the slave devices in FIG. 40 to pass packets of data or instructions from one to another, as a ring topology bus requires. Accordingly, the connection of the slave

10   devices to <u>*only*</u> the master chip as shown in FIG. 40 is not a "ring topology" and simply cannot be characterized as a "ring topology".

FIG. 40 also shows the master chip 4010 to have two *different* chip enable lines (CE1 and CE2), a single write enable line and a single output enable line. Each slave device 4020 receives the same address and data lines, the same write enable and the

15   same output enable but each slave devices receives a <u>*different*</u> one of the chip enable lines. In a ring topology network, there would be no reason to connect both slave devices as they are shown in FIG. 40. The only reason to connect them as shown in FIG. 40 is so that each of the slave devices are <u>*independently*</u> addressable by way of the chip enable lines CE1 and CE2. In fact, Winegarden states in column 37, lines 35-40 that the master

20   chip 4010 can communicate directly to "targeted" slave chip, using a "chip select pin 4140" that each slave chip has. That each slave chip can be "targeted" precludes reading Winegarden as disclosing a ring topology network, contrary to the assertions in the Office Action.

In column 37, beginning at line 1, Winegarden describes a multi-chip

25   environment as having one master chip used to talk to external memories as well as all of the slave chips 4020, 4030, as shown in Figure 40. In lines 7-8, Weingarten describes how each slave device 4020 and 4030 can output its own copy of a "DONE" signal that signals to the master device 4010 that one of the devices has completed a read or write transaction. Thereafter, the master can retrieve results directly from the appropriate

30   device.

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That each slave chip can be independently addressed by the master' use of a chip select or chip enable signal precludes reading the applicant's "ring topology" limitation on the Winegarden reference. That each slave device can independently signal its completion of a task also requires that the devices 4020 and 4030 operate

5   independently of each other, *i.e.*, one need not wait for the communication of a task from one device to another as would be the case in a ring topology network.

While the applicant appreciates that the examiner must construe the pending claims as broadly as reasonably possible, nonetheless one cannot construe the ring topology claim limitation of the pending claims to read on the Winegarden reference

10   because Winegarden simply does not teach or suggest a ring topology network. Stated alternatively, one of ordinary skill in the art would never equate and it would be an error to equate a ring topology bus with the individual, master-slave connections of Winegarden.

Indeed, the master-slave arrangement of Winegarden, with each slave

15   devices receiving a *different* one of the chip enable lines, *teaches away* from the ring topology network of the present invention. Such teaching away is the antithesis of art suggesting that a person of ordinary skill go in the claimed direction. See *In re Fine*, 873 F.2d 1071 (Fed. Cir. 1988). This teaching away from Applicants' invention is a *per se* demonstration of lack of obviousness and a lack of anticipation.

20   Claims 1-10, 19, 20, 27 - 35, and 39 – 48, therefore, are not anticipated under 35 U.S.C. §102 by the Winegarden reference. The rejection of claims 1-10, 19, 20, 27 - 35, and 39 – 48 therefore should be withdrawn.

IV. The Rejections under 35 U.S.C. §103(a) Should be Withdrawn:

25   As set forth above, the Patent Office rejected claims 11-13, 14-18, 21-26, 36-38 under 35 U.S.C. §103(a) as being obvious over Winegarden. The Patent Office admitted that all of the limitations recited in this claims are not expressly disclosed by Winegarden.

As set forth above, Winegarden does not show or suggest the "ring

30   topology" bus that is recited in each of the independent claims and for that reason alone, none of the independent claims and none of the dependent claims can be rejected under

§102 or §103 because claim limitations cannot be ignored. There is more than ample Federal Circuit precedent requiring that all claim limitations must be considered, and that the elements following "adapted to" are affirmative claim limitations which must be considered and cannot be vitiated, whether for validity or infringement determinations.

5   Since Winegarden does not show or suggest the ring topology limitation recited in the independent claims and no cited reference shows or suggest the limitation, the rejections of claims 11-13, 14-18, 21-26, 36-38 under 35 U.S.C. §103 must be withdrawn.

If the Patent Office contends that a claim limitation not explicitly disclosed in Winegarden, would have nevertheless been obvious to one of ordinary skill,

10   but then does not or cannot identify at least one prior art reference showing the same to be true, it necessarily follows that the rejection is unsupportable and must be withdrawn. Indeed, even if the Patent Office found some other reference, which it has not, identification of any individual part claimed is insufficient to defeat patentability of the whole claimed invention. See *In re Kotzab*, 217 F.3d 1365 (Fed. Cir. 2000).

15   Accordingly, no *prima facie* showing of potential anticipation or obviousness has been made, and any assertions to the contrary have been clearly rebutted. *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998); *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). The rejection of claims 11-13, 14-18, 21-26, 36-38 as amended, under Section 103, therefore, should be withdrawn.[1]

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[1] In addition, because these claim rejections are not supported by any cited prior art, and further are not supported by any suggestion or motivation to combine references, the rejection must be characterized as being based on personal opinion, knowledge or belief, because such a rejection is wholly unsupported by evidence of facts. Since it appears that the Patent Office rejected claims 11-13, 14-18, 21-26, 36-38 based on the personal opinion or belief of the Examiner, under the provisions of 37 C.F.R. §1.104(d)(2), the Examiner must support such a rejection by an affidavit, *when called for by an applicant*. Because the rejection of claims under 35 U.S.C. §103(a) cannot be based upon the teachings of Winegarden alone, the Applicant hereby requires the provision of the affidavit set forth in 37 C.F.R. 1.104, setting forth therein, facts within the personal knowledge of the Examiner, that claim limitations not shown by Winegarden would have nevertheless been obvious to someone of ordinary skill in the art, as of the filing date of the application. As provided by the rule, such an affidavit shall be subject to contradiction or explanation by affidavits of the applicant or other persons.

S/N 10/765,556

      The Applicant respectfully submits that the present claims are in condition for allowance. On the basis of the above amendments and remarks, reconsideration and allowance of the application is believed to be warranted, and an early action toward that end is respectfully solicited. In addition, for any issues or concerns, the Examiner is

5   invited to call the attorney for the applicant at the telephone number provided below.
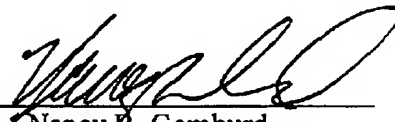
                                 Respectfully submitted,
                                 Eric Coleman

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    September 13, 2006   By_____
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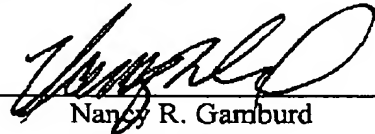   Fax: 312-276-4176

21

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment And Response (22 pages)
Transmittal (PTO/SB/21) (1 page), Fee Transmittal (PTO/SB/17) (1 page), and Petition

5   for Extension of Time (PTO/SB/22) (2 pages, original plus 1 copy) (26 total pages), for
Eric Coleman, Serial No. 10/765,556, entitled "System And Method Using Embedded
Microprocessor As A Node In An Adaptable Computing Machine", have been
transmitted by facsimile to the US Patent and Trademark Office to fax number (571) 273-
8300 (Centralized Facsimile Number), on September 13, 2006.

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22